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THE PROBLEMS OF MARKS.

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THE USE OF THE MULTITRACK, ACCELERATED, AND ENRICHMENT PROGRAMS CURRENTLY EMPLOYED IN HIGH SCHOOLS REQUIRES A CHANGE IN THE LETTER-GRADE GRADING SYSTEM. THE AUTHOR SUGGESTS ASSIGNING ROMAN NUMERALS TO THE TITLE OF THE COURSE TO DESIGNATE COURSE CONTENT DIFFICULTY OR REQUIRED STUDENT LEVEL OF PERFORMANCE. GRADE-POINT AVERAGE WOULD BE COMPUTED BY ADDING THE NUMERICAL EQUIVALENTS OF LETTER GRADES AND THE ROMAN NUMERAL AND DIVIDING THIS TOTAL BY THE SUM OF THE ROMAN NUMERALS. THIS PROCEDURE ACCOUNTS FOR THE VARIOUS SUBJECT-TO-SUBJECT LEVELS OF STUDENT PERFORMANCE WITHOUT ABANDONING FIVE-LETTER GRADES WITHIN EACH TRACK. (PP)

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THE PROBLEMS OF MARKS

The present problems of evaluation in the public schools have become increasingly difficult due to curricular improvements. Our schools have gone into multiple track programs, accelerated programs, and enrichment programs with the result that the A's, B's, and C's as individually assigned by teachers are now illogical. If there is homogeneous grouping, the normal curve is out of place, because if used, certainly an A in a low ability group does not represent the same level of work as an A in a high ability group. In fact, some able students have avoided high ability groups so that they might receive better marks. Two remedies for this problem have been proposed.

1. Every teacher might give, in any section, the same proportion of A's, B's, and C's but those letter grades could be weighted by the ability of the section. This would require a complicated report card system so that the B^1 representing a B in the top group would be different from a B^7 in the 7th group. This would become even more confusing when schools of different sizes were taken into account.

2. A rigid standard of evaluation using the same test and the same marking for every section might be adopted. This would mean that the bottom section might all have F's, and the top section might all have A's. This would reduce the competition motivation in the upper group and guarantee fatalism in the lowest group.

It is proposed that a new system be devised for evaluation and that the five track plan or the pupil's equivalent level of performance serve as a base (see diagram on page 8). Under this scheme, the subject taken would have a track notation. For example, the students in the 10th grade English upper section would be identified as English V; the 10th grade English student in the lower section would be identified as English I. Under this scheme, V would contain the top 10 percent in performance; IV would embrace the next 20 percent in performance; III, the middle 40 percent; in II there would be 20 percent below the middle group in performance; and in I, the lowest 10 percent in performance. These proportionate Roman Numerals could be used from school to school, and then within each class, the A, B, C, standard would be used.

Now it is assumed that a student who is in section V in English is not necessarily in section V in all other subjects, so the following scheme is suggested to arrive at grade point averages for admission to college: The value of the Roman Numeral for a section could be multiplied by the Arabic numeral representing the achievement level for the course in each instance. Totaling the products of these for all the courses and dividing by the sum of the Roman Numerals would give the grade point average. See the example on the next page.

In such a plan, it is assumed that the teaching content will actually vary according to the Roman Numeral assignment so that possibly, by the end of high school, those in group V might be two years ahead of those in group III from the point of view of intensity and depth.

There needs to be in each school an agreed-upon weighting for each achievement level, and there needs to be also a description of objectives and scope for the section level of each subject. Then the entire high school standard should be reviewed and, if possible, standardized from school to school and/or school system to school system.

Since such a standardization would be difficult to bring about, it is suggested that a few schools try it out, that a brief on the system be included on the student's transcript, that each teacher in a school employing the system maintain a course of study plan with the details on the articulation of it. It is always difficult to develop sequential and level materials in a course of study, but the exchange of information about such materials could bring the school systems closer together in such an evaluation effort.

EXAMPLE

Derivation of a grade point average for a 10th grade student for a school year: A = 5, B = 4, C = 3, D = 2, F = 1, and Roman Numerals indicate level of section taught.

	Section	Teacher's Mark	Weight
Social Studies, World Cultures	WC III	C	3 x 3 = 9
English 10th Grade	Eng. 10 IV	C	4 x 3 = 12
Algebra	Alg. 2 IV	B	4 x 4 = 16
Biology II	Bio. 2 III	B	3 x 4 = 12
Spanish II	Span. 2 II	B	2 x 4 = 8
	Sum of Roman Numerals = 16		57

Average = 57 ÷ 16 = 3.56 or between a B and C.

The letter grade medians of the following examples could be used to set level of a particular section:

Example I could have weight of C+ or III.5.

Example II could have weight of C+ or III.5.

Example III could have weight of C or III.

Because it seems unreasonable to many to use the same proportion of A's, B's, and C's in each section, the following system, which depends on a group's reading performance, is proposed.

A DEVICE FOR GIVING GRADES TO A GROUP WHO ARE NOT NORMALLY DISTRIBUTED FOR THEIR GRADE LEVEL

Use grade equivalent scores from a standard reading test. Make frequency distribution of results with interval units of half a year or .5 years for the distribution. Have the interval straddle the whole grade numbers and the half grade numbers.

GRADE EQUIVALENT MIDPOINT	NUMBER OF PUPILS f	CONVERT f TO PERCENT (f/N x 100)	LETTER GRADE* BASED ON NORMAL
10.0 (9.8 to 10.2)			
9.5			
9.0			
8.5			
8.0			
7.5			
7.0			
6.5			
6.0			
5.5 (5.3 to 5.7)			
5.0			

*Indicate median of test norms for grade level of children. Find grade equivalent distance from median to 70th percentile = _____ or d. This result times 2 is the C band or interval width, median $\pm$ d = C grade. Median + 3d to 1d = B interval. Above that is A band. D is from median -d to -3d. F is below the D band.

A plan for normal number of A, B, C, D, or F's is indicated in attached chart. See Davison's Fives, page 8.

EXAMPLE I

A seventh grade class tested for reading at the start of the year has this distribution.

GRADE EQUIVALENT	f	100 x f/N %	*	
9.5 (9.3 to 9.7)	2	6.7		)
9.0	3	10.0		) -----B's = 50%
8.5	6	20.0		)
8.0	8	26.6	13.3	)
7.5	7	23.3	13.3	)
7.0	2	6.7		) -----C's = 50%
6.5	2	6.7		)
6.0				)
5.5				)
5.0 (4.8 to 5.2)				)
4.5				

*From test norms median = 7.0

Median to 70th percentile = 1.0 = d

C = 7.0 + or $\pm$ 1.0 or 8.0 to 6.0 or 50%

D = 6.0 and below or zero %

B = 8.0 to 10.0 or 50%

A = 10.0 and above or zero %

Since 8.0 is a dividing line, 13.3% were placed on either side.

This means if generally well taught, in this group there would be 50% B's and 50% C's with no D's or F's. Those students whose work was clearly different from either major group might fit the classification of A, D, or F.

Such a group as that in Example I would vary from a normal curve with middle 40% as C's as follows:

GRADE EQUIVALENT MIDPOINTS	NORMAL SCORING	SPECIAL GROUP
9.5		
9.0	24% = B	50% = B
8.5		
8.0		
7.5		
7.0	40% = C	50% = C
6.5		
6.0		
5.5		
5.0	24% = D	
4.5		

Note: For a normal group, A's would be above 10.0 = 6%, F's would be below 4.0 = 6%.

"d" is 1.0 in grade equivalent units and .52 in standard score units. In this sample the group is quite homogeneous with no A's or D's or F's. This means that compared to standard test norms the sample can be assigned B's and C's. In actual practice, if there was outstanding work by a few, it might be graded A or, in the case of poor work, D and F accordingly. Such a sample might occur in the second highest track.

To parallel ability in grading this group, the special proportion of letter grades may be used.

If this scheme were followed for a series of teachers, the combined class results would have the pattern of a normal distribution.

EXAMPLE II

(Beginning the second half of 7th Grade)

GRADE EQUIVALENT MIDPOINTS	f OF GROUPS ON READING TEST	%		*
10.5	1	3	____	A = 3%
10.0	0	0		
9.5	2	6		
9.0	6	17		B = 54% = 52%
8.5	9	25		
8.0	10	28	6 / 22	
7.5	6	17		C = 41%
7.0	1	3	2 / 1	
6.5	1	3		D = 4%
6.0				
	N = 36	102%		

*From test norms grade equivalent from median to 70th percentile = .6 = d

Therefore, C = 7.5 ± .6 = 6.9 to 8.1 or 41%

B = (7.5 + .6) to (7.5 + 1.8) or 8.1 to 10.3 or 54%

A = 3%

D = 4%

Since the above adds to 102%, the B's can be reduced to 52%, thus giving the error to the largest part. The above is an example of a fairly homogeneous group with two possible outsiders.

EXAMPLE III

(A group at the start of 4th Grade)

GRADE EQUIVALENT MIDPOINTS	f OF GROUP ON READING TEST	%		*
8.0				
7.5	1	3		
7.0	0	0		A = 19%
6.5	2	6		
6.0	2	6		
5.5	3	9	$\frac{4}{5}$	
5.0	3	9		B = 20%
4.5	4	13	$\frac{6}{7}$	
4.0	6	19		C = 33%
3.5	4	13	$\frac{7}{6}$	
3.0	3	9		D = 18%
2.5	2	6	$\frac{3}{3}$	
2.0	1	3		
1.5	1	3		F = 9%
1.0	--	--		
	N = 32	99%		

*From test norms grade equivalent of median to 70th percentile = .5 = d.

Therefore, if median = 4.0, C = 3.5 to 4.5 = 33%

B = 4.5 to 5.5 = 20%

A = 5.5 and above = 19%

D = 2.5 to 3.5 = 18%

F = below 2.5 = 9%

The above example is a heterogeneous group with more top students than bottom ones.

Conclusion:

The result is that with 3 different groups, the proportion of letter grades changes, but in a logical way. If all similar classes at one grade level were added together from a large sample, the result would be a normal curve.

NORMAL FREQUENCY DISTRIBUTION
INDICATING PERCENTS FOR
STANINES AND STANDARD FIVES

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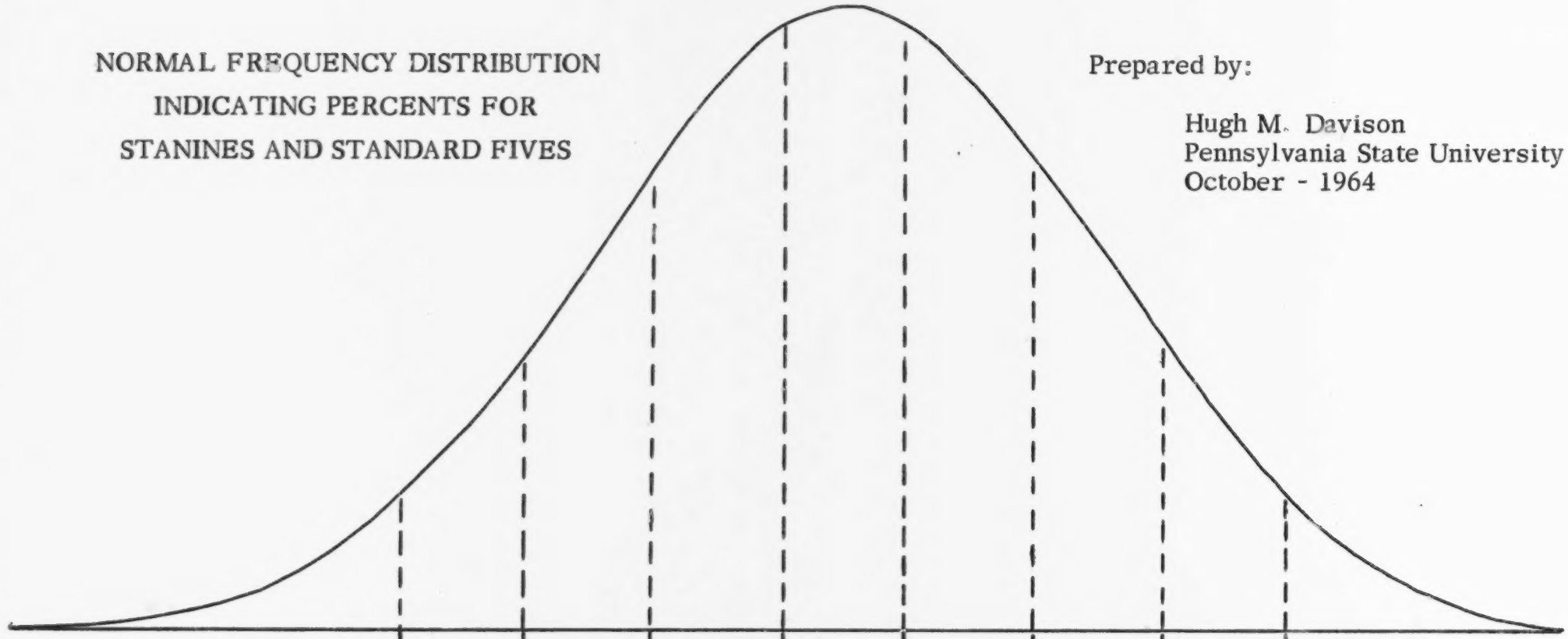
October - 1964



% in Stanine Interval	4	7	12	17	20	17	12	7	4
Stanine	1	2	3	4	5	6	7	8	9

Percentiles	1		5	10	20	30	40	50	60	70	80	90	95	99

Davison	%	6	24	40	24	6
Standard	Fives	1	2	3	4	5
Fives*	Letter Grades	F	D	C	B	A

*The width of a standard five interval is the distance between the 30th and 70th percentiles. It is slightly more than one standard deviation in a normal curve. Each of the standard fives uses this interval width which may be in raw scores or standard scores.